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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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YAO, SAM CHAUN CUA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 02/21/2003

16

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/529,391	HAGGARD ET AL.	
	Examiner	Art Unit	
	Sam Chuan C. Yao	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 January 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4-21 and 101-135 is/are pending in the application.
- 4a) Of the above claim(s) 101-135 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2, 4-14, and 16--21 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 15.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Newly submitted claims 101-135 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

The elected group and newly added groups are not so linked as to form a single general inventive concept under PCT Rule 13.1, because under PCT Rule 13.2, they lack the same or corresponding special technical features. This is readily demonstrated from the fact that, the patentability in the independent claims of each group is based on divergent combination of method steps. For instance, independent claim 1 of the elected group requires the following special technical feature of: *"... each comprising first and second materials having a relative difference in heat shrinkage of at least about ten percent"*; but does not require a special technical feature in independent claim 101 of: *"applying dry heat to the web ..."* (emphasis added); and vice versa. Similarly, independent claim 1 of the elected group requires the following special technical feature noted above; but does not require a special technical feature in independent claim 121 of: *"wherein said first and second materials are non-hydrophilic"*; and vice versa.

Presently, no claim is generic. Rejoinder of these two groups of method will be considered, upon indication of allowable subject matter, depending on the basis thereof.

Note: during a telephone interview with Mr. Andrew Aldag on around 2-10-03, Mr. Aldag was informed that, a newly added group would be rejoined on a condition that, **all limitations in an allowable independent claim 1 (i.e. claim 1 + claim 15) is incorporated into independent claim 101.**

To rejoin a second added group, **all limitations in an allowable independent claim 1 (i.e. claim 1 + claim 15) needs to be incorporated into independent claim**

**121.** Note: Examiner did not realize that, two extra groups was added in Applicant's amendment.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 101-135 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or  
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-2, 4, 7-9, 17, and 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Pike et al (US 5,759,926) and optionally as evidence, for example by, Yoshida et al (US 5,753,351) or Suzuki et al (US 5,814,569) for reasons of record set forth in Paper No. 12 numbered paragraph 3 and for reasons set forth hereinafter.

Note: Pike et al teaches forming conjugate fibers from incompatible polymer components such as polypropylene-polyethylene terephthalate; and further teaches using “*steam and mixture of steam and air*” as a medium for splitting the conjugate fibers (col. 3 lines 45-62; col. 7 line 60 to col. 8 line 10). It is

acknowledge that, Pike et al does not explicitly disclose the incompatible polymer components particularly the polypropylene-polyethylene terephthalate in conjugate fibers as having a *“relative difference in heat shrinkage of at least about ten percent”* (emphasis added) when subjected to a *“steam and mixture of steam and air”* splitting medium. However, on page 9 line 29 to page 10 line 3 of Applicant’s specification, it discloses that, a polypropylene-polyethylene terephthalate, which is modified by 20 mole % of pure isophthalic acid and a powdered transesterification inhibitor, have a *difference in heat shrinkage of approximately **thirty percent** under heating conditions of the present invention”* (emphasis added; bold face added). On the bottom of page 10, it further discloses using the following heaters *“hot air ...; steam ...; radiant heat; and a combination thereof”* to split the conjugate fibers. In view of the similarity of the splitting mediums (i.e. steam/air) and in view that, a polypropylene-polyethylene terephthalate is expected to have characteristics which closely resemble to a polypropylene-polyethylene terephthalate modified by 20 mole % of pure isophthalic acid and a powdered transesterification inhibitor, it would be reasonable to expect that, a polypropylene-polyethylene terephthalate when subjected to *“steam and mixture of steam and air”* would/should at least have *“relative difference in heat shrinkage of at least about ten percent”*.

Note further: Where ... the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. **Whether the rejection is based on “inherency” under 35 USC § 102, on prima facie obviousness” under 35 USC § 103, jointly or alternatively,**

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**the burden of proof is the same, and its fairness is evidenced by th PTO's inability to manufacture products or to obtain and compar prior art products." In re Best, 562 F2d 1252, 1255, 195 USPQ 430, 433-4 (CCPA 1977).**

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 4-9, 12-14, and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pike et al (US 5,759,926) in view Mizoe et al (US 5,790,926) for reasons of record set forth in Paper No. 12 numbered paragraph 5.

5. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references set forth in numbered paragraph 3 or 5 as applied to claim 1 above, and further in view of Hogle et al (US 5,277,976) or Harrington et al (US 5,985,193) for reasons of record set forth in Paper No. 12 numbered paragraph 5.

***Response to Arguments***

6. Applicant's arguments filed on 01-21-03 have been fully considered but they are not persuasive.

In response to Counsel's argument on page 10 last paragraph to page 11 full paragraph 2, it is respectfully submitted that, the claims in the elected group as presently recited do not preclude having one of the two incompatible polymers to be hydrophilic. Independent claim 1 as presently recited only requires the

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incompatible components in the conjugate fibers to have a *“relative difference in heat shrinkage of at least about ten percent”* (emphasis added) and applying heat to a web comprising the conjugate fibers to split the fibers in an in-line process (note: all claims does not even require the process to be continuous). As clearly illustrated in figure 8, conjugate fibers comprising two incompatible polymers in a moving web are split continuously in-line by subjecting the fibers to *“steam and mixture of steam and air”* (i.e. heat) at a temperature range of around 60-100 °C (col. 3 lines 45-61, col. 7 line 60 to col. 8 line 10). As for the limitation of incompatible polymers having a *“relative difference in heat shrinkage of at least about ten percent”* (emphasis added), such would have been inherent for **at least** conjugate fibers comprising polypropylene-polyethylene terephthalate subjected to *“steam and mixture of steam and air”* for reasons set forth in numbered paragraph 2 above.

In response to Counsel's argument on page 12 full paragraph 1, Examiner strongly disagrees with Counsel's argument that, there is motivation to incorporate the teachings of Mizoe to the process of Pike et al. It is well settled that it is a matter of obviousness for one of ordinary skill in the art to substitute one means for another that is known in the art to be, essentially, its functional equivalent. In re Siebentritt, 372 F. 2d 566, 568, 152 USPQ 618, 619 (CCPA 1967). Equally important, as noted in the prior office action, an incentive for modifying the process of Pike et al would have simply been to obtain the expected advantage of simplifying a production process and reducing a

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production cost (i.e. obviate the need to modify polymers to make them hydrophilic, and obviate the need to dry a wet fiber web).

As for Counsel's argument on page 13 1<sup>st</sup> full paragraph, it is respectfully submitted that, an obviousness question cannot be approached on the basis that an artisan having ordinary skill would have known only what they read in references, because such artisan must be presumed to know something about the art apart from what the references disclose. See *In re Jacoby*, 309 F.2d 513, 135 USPQ 317 (CCPA). One in the art would have readily recognized and appreciated that, the greater the relative difference in thermal shrinkage between a pair of incompatible polymer components, the easier conjugate fibers would split when subjected to heat. For this reason, it would have been obvious in the art to use a pair of incompatible polymer components which have "*relative difference in heat shrinkage of at least about ten percent*" (preferably significantly higher than 10 percent) so that, the conjugate fibers in a web would readily split in-line when subjected to heat. Moreover, one in the art would have determined, by routine experimentation, a workable relative difference in thermal heat-shrinkage. There is none, but only the expected result of effectively splitting thermo-splittable conjugate fibers by heat would have been achieved.

In response to Counsel's argument regarding claims 5-6 on page 13 last paragraph to page 14 full paragraph 1, the collective teachings of Pike et al and Mizoe et al would have suggested to one in the art that a conventional heater such as a radiant heater, hot-air, etc. for a continuously moving fiber web can



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effectively be utilized to split thermo-splittable conjugate fibers. What is essential in the process is to form conjugate fibers comprising incompatible components which have a relatively large "*difference in heat shrinkage*" and conjugate fibers having a large surface area, so that the components in the fibers readily split when the web is subjected to heat. Moreover, those versed in the art reading the collective teachings of Pike et al and Mizoe et al would have readily recognized and appreciated that, it is not necessary to use a hydrophilic polymer in forming a thermo-splittable conjugate fiber. As repeatedly noted, all that would be needed is to use two incompatible polymer components having a have a relatively large "*difference in heat shrinkage*" and a large surface area so that the components in the fibers readily split when the web is subjected to heat.

In response to Counsel's argument regarding Hogle and Harrington on page 14 full paragraph 2 to page 15 line 8, Examiner agrees with Counsel that, these references do not disclose the specific structure recited in claims 10-11. The teachings of Hogle and Harrington were merely cited to show that it is well known in the art to form fibers having cross-section in a form of a cross. In fact, the fibers of Hogle and Harrington are not splittable conjugate fibers. However, one in the art wanting to form a thermo-splittable conjugate fiber having cross-shaped cross-section would have form the structure recited in claims 10-11 in order to readily expose the surfaces of both components in the conjugate fibers to heat Tsujiyama et al is optionally cited as evidence to illustrate that the conjugate fiber structure recited in claims 10-11 is old in the art (abstract; figures 3-5a).

***Claim Objections***

7. Claim 15 is objected to because of the following informalities: "terephthalate" and "isophthalic" should read --terephthalate-- and --isophthalic--, respectively. Appropriate correction is required.

***Specification***

8. The disclosure is objected to because of the following informalities: on page 9 last paragraph to page 10 line 3, "terephthalate" and "isophthalic" should read --terephthalate-- and --isophthalic--, respectively.

Appropriate correction is required.

***Allowable Subject Matter***

9. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: upon further consideration, in view that there is no suggestion in the art to form splittable conjugate fibers having the components recited in claim 15, this claim is allowable.

***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (703) 308-4788. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7115 for regular communications and (703) 305-7718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



Sam Chuan C. Yao  
Primary Examiner  
Art Unit 1733

scy  
February 19, 2003